ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 86

[EPA–HQ–OAR–2015–0827; FRL-nnnn-nn-OAR]

Revised Final Determination of the Mid-term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light-duty Vehicles

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: In a March 22, 2017, *Federal Register* notice, the Environmental Protection Agency (EPA) announced its intention to reconsider the Final Determination of the Mid-term Evaluation of greenhouse gas emissions standards for model year 2022-2025 light-duty vehicles. EPA provided a public comment period on the reconsideration during August – October 2017 and held a public hearing in September 2017. In this notice, EPA is announcing that it is withdrawing the previous Final Determination issued by the agency in January 2017 and is making a new Final Determination that the standards are not appropriate in light of the record before EPA and, therefore, should be revised to be less stringent as appropriate, and EPA in a forthcoming *Federal Register* notice will initiate a notice and comment rulemaking under section 202(a) of the Clean Air Act to further consider appropriate standards for model year 2022-2025 light-duty vehicles.

FOR FURTHER INFORMATION CONTACT: Christopher Lieske, Office of Transportation and Air Quality (OTAQ), Assessment and Standards Division (ASD), Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor MI 48105; telephone number: (734) 214-4584; email address: lieske.christopher@epa.gov fax number: 734-214-4816.

SUPPLEMENTARY INFORMATION:

Background

The 2012 rulemaking establishing the National Program for federal greenhouse gas (GHG) emissions and corporate average fuel economy (CAFE) standards for model year (MY) 2017-2025 light-duty vehicles included a regulatory requirement for the Environmental Protection Agency (EPA) to conduct a Mid-term Evaluation (MTE) of the GHG standards established for MYs 2022-2025.[1] EPA regulations on the Mid-term Evaluation process required EPA to issue a Final Determination no later than April 1, 2018 on whether the GHG standards for MY 2022-2025 light-duty vehicles remain appropriate under section 202(a) of the Clean Air Act.[2] The regulations also required the issuance of a draft Technical Assessment Report (TAR) by November 15, 2017, an opportunity for public comment on the Draft TAR, and, before making a

[1] 40 CFR 86.1818-12(h).

[2] *Id.; see also* 77 FR 62624 (October 15, 2012).

Final Determination, an opportunity for public comment on whether the GHG standards for MYs 2022-2025 remain appropriate. In July 2016, a Draft Technical Assessment Report (TAR) was issued for public comment jointly by the EPA, the National Highway Traffic Safety Administration (NHTSA), and the California Air Resources Board (CARB).[3] Following the Draft TAR, EPA issued a Proposed Determination for public comment in November 2016.[4] Despite pleas from the public and the regulated community to extend the comment period in order to provide EPA with meaningful comments and new information, EPA went ahead and hastily rushed to issue a Final Determination in January 2017 finding that the MY 2022-2025 standards remained appropriate.[5]

On March 15, 2017, President Trump alongside U.S. EPA Administrator Pruitt and U.S. Department of Transportation Secretary Chao announced a restoration of the original mid-term review timeline in Detroit, Michigan. The president made clear in his remarks, "If the standards threatened auto jobs, then commonsense changes" would have to be made in order to protect the economic viability of the U.S. automotive industry. In response to the president's direction, EPA announced in a March 22, 2017, *Federal Register* notice, its intention to reconsider the Final Determination of the Mid-term Evaluation of greenhouse gas emissions standards for model year 2022-2025 light-duty vehicles.[6] The Administrator stated that EPA would coordinate its reconsideration with the rulemaking process to be undertaken by the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) regarding Corporate Average Fuel Economy (CAFE) standards for cars and light trucks for the same model years. EPA provided an opportunity for public comment on the reconsideration during August – October 2017[7] and held a public hearing in September 2017.[8] The comment period provided an opportunity for commenters to submit comments to EPA, including additional studies and newly available information. EPA's regulations at 40 CFR 86.1818-12(h) state that in making the determination as to whether the existing standards are appropriate, the Administrator *shall consider the information available on several listed factors relevant to setting greenhouse gas emission standards under section 202(a) of the Clean Air Act for model years 2022 through 2025.*[9]

Overview of Public Comments on MTE Reconsideration[10]

On August 21, 2017, EPA published a notice in the *Federal Register* announcing the opening of a public comment period and inviting stakeholders to submit any additional comments, data, and information they believed were relevant to the Administrator's reconsideration of the January 2017 Final Determination. EPA held a public hearing in Washington D.C. on

[3] 81 FR 49217 (July 27, 2016).
[4] 81 FR 87927 (December 6, 2016).
[5] Docket item EPA-HQ-OAR-2015-0827-6270 (EPA-420-R-17-001).
[6] 82 FR 14671 (March 22, 2017).
[7] 82 FR 39551 (August 21, 2017).
[8] 82 FR 39976 (August 23, 2017).
[9] 40 CFR 86.1818-12(h)(1).
[10] The public comments, public hearing transcript, and other information relevant to the Mid-term Evaluation are available in docket EPA-HQ-OAR-2015-0827.

September 6, 2017. EPA received more than 290,000 comments, with about 110 of those from organizations and the rest from individuals.

In the following sections, EPA discusses why the current standards for MY2022-2025 are not appropriate based on an underestimation of costs, inadequate consideration of consumer acceptance, limited growth and consumer acceptance of electric vehicles and other advanced technology and high fuel economy vehicles, an unexpected consumer preference for light trucks over cars, continued low gas prices and a reinstated commitment to coordinate closely with NHTSA. The agency also discusses the commitment to establishing market parity and equal consideration for all advanced vehicle technologies, including natural gas vehicles alongside others. Finally, the determination summarizes key public comments on a range of issues, including the appropriateness of the standards, feasibility, technology and costs, consumer/market issues, and program flexibilities.

Level of the Standards, Feasibility, Technology and Cost

The agency's prior determination was based on trends and data associated with MY 2012 through MY 2015 when all major companies were "over-complying" with their relative GHG compliance requirements and building up their relative credits. Limiting a review of these years was used to justify the aggressive increase in stringency starting in MY 2021 and carrying forward to MY 2022 through MY 2025. EPA's latest data[11] alongside new reports and data submitted by stakeholders indicate a new trend for MY 2016 vehicles whereby some companies, for the first time, had to rely on credits in order to comply with the program. While these companies did remain in compliance, they are having to rely on banked credits earlier than expected. Accordingly, the stringency curve dramatically increases at around the same time these credits could run out complicating the feasibility of compliance for MY 2022 through MY 2025.

EPA received a broad range of new reports and data submitted by commenters during the MTE reconsideration comment period. The reports highlighted a range of concerns regarding the appropriateness of the MY 2022-2025 standards based on the feasibility and practicability of the standards, the effectiveness of technologies either currently available or expected to be commercially available to meet the standards, costs, lead time, and impacts on the auto industry and automobile safety.

The Auto Alliance (Alliance) and Global Automakers provided robust information indicating that the current standards are not appropriate and should be modified. The Alliance stated that "[i]nformation on compliance trends, including the feasibility of meeting the standards, projections on compliance, and the credit system are increasingly indicating that it is not feasible—taking all technology, cost, product cycle, and practical market factors into account—to meet the standards as they are currently set." For example, Figure 1 below was submitted by the Alliance to illustrate their comments that significant vehicle electrification, specifically strong hybrids, would be needed to meet the standards.

[11] EPA, Greenhouse Gas Emission Standards for Light-Duty Vehicles—Manufacturer Performance Report for the 2016 Model Year, Office of Transportation and Air Quality, EPA-420-R-18-002, January 2018, https://www.epa.gov/regulations-emissions-vehicles-and-engines/greenhouse-gas-ghg-emission-standards-light-duty-vehicles.

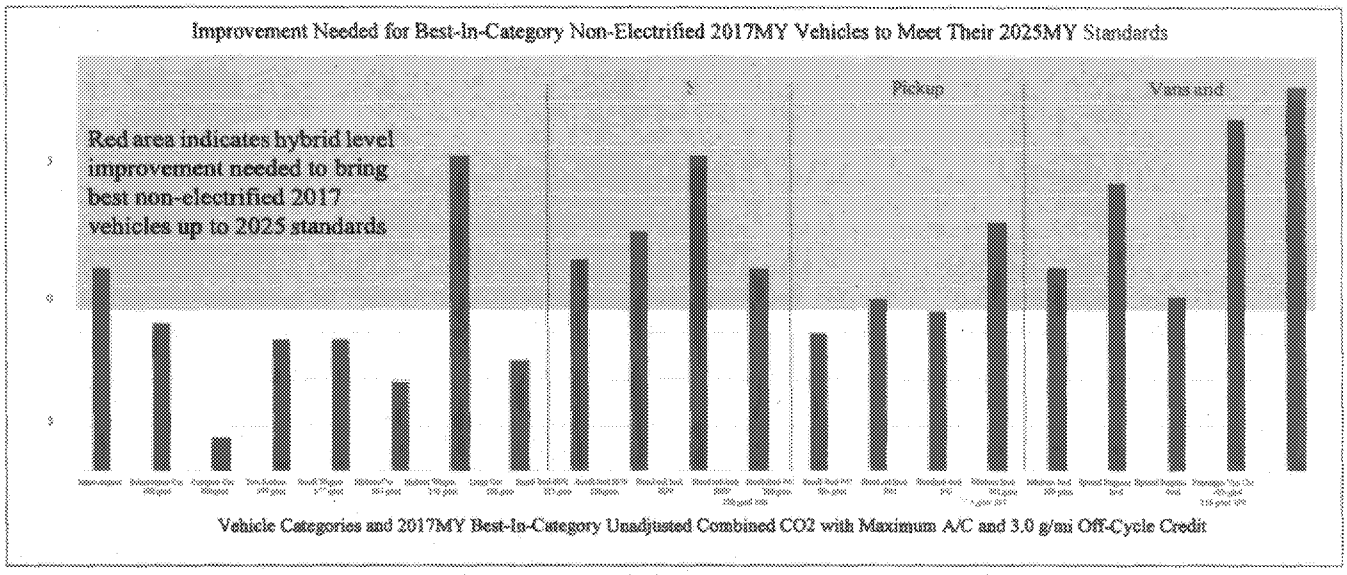

Figure 1: Figure submitted by the Alliance (p. 18) titled "Figure 5: Improvement in CO_2 Emissions Required in the Best MY 2017 Non-Electrified Vehicles to Meet MY 2025 Targets"

The Alliance further stated that the level of technology modeled by EPA is insufficient to meet the standards and that the actual level of technology needed is misaligned with market realities. Global Automakers similarly charged that "decline in vehicle sales, lower gas prices, an increased preference for light trucks over cars, and sluggish demand for high fuel economy vehicles – are taking place as the stringency of the standards increase at an unprecedented rate.... There is, simply put, a misalignment between the increasing stringency of the standards and the decreasing consumer demand for fuel efficiency" and that "revised findings would support the conclusion that adjustments to the regulations are needed." Global Automakers submitted the figure below to show the "sluggish demand" for electrification in the U.S. market from 1999 through early 2016.

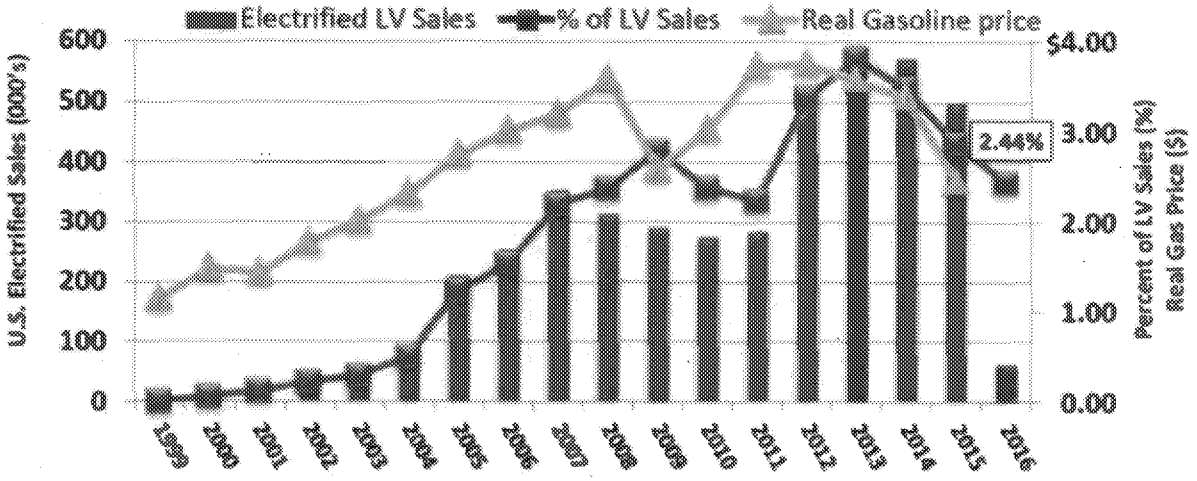

Figure 2: Figure Submitted by Global Automakers (p. 42) titled: "Figure 16: U.S. Electrified Light Vehicle Sales and Take Rate 1999 - 2016 YTD"

Global Automakers, the Alliance, and some individual automakers provided detailed information on a variety of technologies that EPA projected could be used to meet the MY 2022-2025 standards. Regarding the need for electrification, the Alliance asserted that advanced internal combustion engine technologies alone will not meet MY 2025 standards and that the need for greater electrification than EPA originally projected means that issues unique to electrification must be considered. The Alliance further provided that there is presently no non-electric vehicle (strong hybrid, plug-in hybrid (PHEV), or electric vehicle (EV)) that meets 2025 standards, even with credit assumptions, and that those vehicles make up a minimal amount of the market share indicating a less than adequate acceptance by consumers. Despite automakers continuing to offer an increasing amount of advance technology vehicles for sale, consumer adoption remains very low. Through August 2017,

Toyota provided that "compliance with the current requirements through the 2025 MY require gasoline hybrid electric vehicles or more sophisticated forms of vehicle electrification at sales volumes significantly higher than the agencies' estimates and at levels the market is unable or unwilling to support absent significant changes in market signals." Toyota further provided that they continue to disagree with EPA's past assessment that lighter, more aerodynamic vehicles powered by less expensive conventional gasoline powertrains will be sufficient to comply with the standards. Fiat Chrysler (FCA) similarly indicated, "FCA continues to provide data that shows more technology is necessary than the agencies have assumed for 2022-2025MY compliance. The advanced technologies needed, including higher levels of electrification will negatively affect affordability, lowering sales, and ultimately impacting jobs." Mercedes Benz estimated that it will need more than 25 percent battery electric vehicles (BEVs) and around 5 percent PHEVs in its fleet to meet the standards in MY2025, noting that these estimates are significantly higher than the 7 percent BEV and 3 percent PHEV shares projected by EPA for the overall fleet.

Global Automakers provided information stating that EPA places heavy reliance on a small number of what it considers to be yet-to-be-proven technologies such as 48-volt mild hybrid

systems and this reliance overlooks consumer acceptance, brand identity, and intellectual property considerations. Information from the Alliance reveals that dynamic cylinder deactivation and variable compression ratio engines remain in the early stages of development and have highly questionable effectiveness potentials. The Alliance further noted that EPA should exclude from its technology assessments dynamic skip fire, variable compression ratio engines, Mazda's SkyActiv X, and other technologies that are protected by intellectual property rights and have not been introduced and certified to Tier 3 emissions requirements. Toyota's information clarified that "[n]ot yet implemented technologies, such as advanced cylinder deactivation and 48V mild hybrid systems, can play a role in improving efficiency and reducing CO_2 emissions moving forward; however, we do not project these technologies as sufficient to meet the 2025 MY requirements." Regarding the use of Atkinson cycle engines, the Alliance commented that the EPA analysis oversimplified and did not consider the financial consequence of aggressive penetration. New information from Global Automakers provided that "it is difficult to maintain confidence in the agency's optimism about the wide consumer acceptance, supply availability, safety and learning for new, unproven technologies such as the broad application of naturally aspirated Atkinson cycle engines."

Both the Alliance and Global Automakers made clear that EPA underestimated costs. The Alliance identified three areas related to technology cost that it believes need further assessment: direct technology costs, indirect cost multipliers, and cost learning curves. Global Automakers asserted that EPA's modeling has consistently underestimated the costs associated with technologies and the amount of technology needed, commenting that a quality check at every step of the process needs to be done with real-world data that has been supplied by manufacturers.

In general, the Alliance, Global Automakers and others found that EPA's modeling overestimates the role conventional technologies can play in meeting future standards and that industry believes more strong hybrids and plug-in electric vehicles will be needed to meet current standards, raising concerns about cost and affordability. Both the Alliance and Global Automakers submitted detailed information regarding various aspects of EPA modeling, raising several technical issues, and submitted several new studies in support of their comments, including:

- Analysis of EPA Vehicle Technology Walks in Prior Final Determination Response to Comments (Alliance Attachment 2).
- Evaluation of the Environmental Protection Agency's Lumped Parameter Model Informed Projections from the Proposed Determination (Novation Analytics, September 2017) (Alliance Attachment 3).
- Critical Assessment of Certain Technical and Economic Assumptions Made in EPA's Final Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emission Standards under the Midterm Evaluation (Trinity Consultants, NERA Economic Consulting, October 2017) (Alliance Attachment 6).

The auto industry and auto industry trade associations made clear justifications for revising the standards and continue to develop more specific recommendations on what those revisions should entail. The Alliance stated that "[f]or now, EPA should reconsider the Prior Determination, conclude that the MY 2022-2025 standards are not appropriate, and as a result of that conclusion, immediately initiate a rulemaking process for the promulgation of revised MY

2022-2025 GHG standards. Through that rulemaking process EPA should determine the appropriate standards with input from all stakeholders, and at that time, the Alliance will present its thoughts on the rule changes necessary for EPA to achieve appropriate standards." Global Automakers concurred with that assessment and suggested, "Adjustments could take numerous forms, including credit flexibilities...." while Toyota noted that "program adjustments are needed that either incentivize the technologies required for compliance or bring the standards in line with the conventional gasoline technologies the market will accept."

Groups representing automotive technology suppliers also support revisiting the standards, but urged caution. The Alliance for Vehicle Efficiency (AVE) commented in support of the reconsideration but cautioned EPA that significantly changing and reducing the standards would impact investments suppliers have made for future growth. The Motor and Equipment Manufacturers Association (MEMA) similarly commented that major changes in stringency of the standards would impact supplier jobs as well as long-term business and technology investments. Some suppliers asserted that a more stringent standard bodes well for long-term investment , including the Manufacturers of Emission Controls Association (MECA). MECA recommended that the latest suite of technology options should be included in EPA's updated analysis to support its reconsideration.

Suppliers further provided comments about the technologies available to meet the standards. MEMA commented that suppliers continue to improve a myriad of technologies as industry pushes innovation – specifically, more capable 48 volt systems, higher efficiency turbo engines, various advances in thermal management and control technologies, and new composites and materials for improved light-weighting. MECA noted that automakers have announced plans to adopt 48V mild hybrids at a faster rate than originally planned and commented on new technologies that will be in production prior to 2021 but were not considered in the TAR, including dynamic cylinder deactivation, variable compression ratio and electric boost. MECA gave an example that dynamic cylinder deactivation combined with 48V systems which they stated has the potential to improve fuel economy by up to 20 percent. The Aluminum Association provided new studies regarding the use of aluminum in light-weighting, commenting that the aluminum industry continues to provide and improve light-weighting solutions to help meet rigorous GHG and fuel efficiency regulations.

Ethanol producers and agricultural organizations commented in support of high octane blends from clean sources as a way to enable GHG reducing technologies such as higher compression ratio engines. They provided information suggesting that mid-level (e.g., E30) high octane ethanol blends should be considered as part of the Mid-term Evaluation and that EPA should consider requiring that mid-level blends be made available at service stations. The petroleum industry noted that high octane fuel is available today for vehicles that require it and commented that EPA has no basis for including octane number as a factor in the Mid-term Evaluation because it was not considered in the prior rulemakings or the Draft TAR. The Alliance and Global Automakers commented that higher octane gasoline enables opportunities for use of more energy-efficient technologies (e.g., higher compression ratio engines, improved turbocharging, optimized engine combustion) and that manufacturers would support a transition to higher octane gasoline, but do not advocate any sole pathway for producing increased octane.

Consumer and Market Issues

Commenters provided views and information across a range of issues related to impacts on consumers and the vehicle market. Below we summarize information and comments for the following topics: 1) consumer acceptance of vehicles meeting the standards; 2) consumer willingness to pay for fuel economy and other attributes and consumer valuation of fuel savings; 3) affordability of vehicles meeting the standards; 4) effects of the standards on vehicle sales and fleet turnover; and 5) the impacts of the standards on jobs and the macroeconomy.

Consumer Acceptance

The Alliance and Global Automakers that the standards will be effective only if people buy vehicles subject to the standards, but that current trends do not indicate an acceptance by consumers that are needed to comply with more stringent GHG standards going forward. The only vehicles that could comply with the MY 2025 standard have a very low consumer acceptance rate today and make up less than 5% of the total market share. Despite the auto industry providing an increasing amount of battery-electric vehicle models and plug-in hybrid electric vehicle models, combined national sales of these vehicles still account for just over one percent of the market. According to data submitted by the Global Automakers, sales of hybrids peaked in 2013 at 3.1%, but only accounted for 2% of the market in 2016

The Alliance, Global Automakers, Mercedes-Benz, and National Corn Growers Association expressed concerns about low adoption rates of electrified vehicles (strong hybrids, PHEVs, and EVs). Global Automakers stated that customers are not buying electrified vehicles at a rate sufficient for compliance. Mitsubishi and Mercedes-Benz pointed to low gasoline prices and limited infrastructure for electric vehicle charging as an additional obstacle for electric vehicle adoption. Mitsubishi considered the standards unachievable if consumers are not willing to buy more electrification in their vehicles.

Further problematic is the growing preference for light duty trucks over cars. In 2012, the car to truck split was projected to be 67% to 33% respectively for MY 2025. According to EPA's 2016 Fuel Economy Trends Report, the split in MY 2015 was 57% cars to 43% trucks. With regard to MY 2016 compliance, the Alliance commented that the large shift in consumer buying patterns toward the light-truck fleet has negatively impacted industry compliance because the light-truck standards were relatively more demanding during this period of time.

Several commenters expressed concern over potential adverse effects on other vehicle attributes due to the standards. The Alliance, Global Automakers, and Competitive Enterprise Institute (CEI) noted that consumers consider a wide range of features in their purchase decisions. Illinois Corn Growers Association expressed concern over its members' ability to purchase trucks and SUVs for their work as they become more expensive. Mercedes-Benz cited low sales of its S550E PHEV which, though more efficient than its internal combustion engine counterpart, had slower acceleration and reduced trunk space. The National Automobile Dealers Association (NADA) and UAW noted that consumer preferences vary with time and market conditions, such as fuel prices. The Alliance, Global Automakers, and Mitsubishi stated that current low gas prices make the standards more difficult to achieve. The Alliance and NADA pointed to a recent study from Resources for the Future that found greater willingness to pay for performance than for fuel economy, and the potential for misestimating willingness to pay if not taking into account other vehicle attributes. Global Automakers expressed concern that, if EPA cannot calculate consumers' willingness to pay for attributes, it may overestimate the probability of success for the standards.

Consumer Willingness to Pay and Consumer Valuation of Fuel Savings

Global Automakers stated that consumers undervalue fuel-efficient technologies, and asks the agencies to be "clear-eyed and realistic" in considering consumers' willingness to pay for fuel-saving technologies. Mitsubishi stated that, when consumer purchase decisions are not primarily about fuel economy, meeting the standards becomes more challenging. The Alliance suggested that EPA continue to study the role of fuel savings in consumer purchase decisions. The Alliance stated that significant discounts are needed to sell efficient vehicles, which could lead to economic hardship for automakers. The Trinity Consultants and NERA Economic Consulting (TC/NERA) study argued for using, in EPA's benefit-cost analysis, the value of fuel economy that vehicle buyers consider in their purchase decisions, which they argued is less than its full market value.

Some NGOs, including EDF, ELPC, and UCS, cited work sponsored by EPA that finds very wide ranges in estimates of willingness to pay (WTP) for vehicle attributes. They interpreted this variation as suggesting a lack of robustness in the models underlying the estimates. CFA and CU stated that studies using purchasing behavior are based on choices among existing vehicles, not necessarily consumers' preferences; because of this limitation, existing studies may not capture consumers' true WTP for attributes. Instead of using consumer WTP for fuel economy, ELPC recommends that EPA continue using its estimates of "real-world" fuel savings for benefit-cost analysis.

Affordability

The Alliance, Mitsubishi, and Vermont Energy Investment Corporation (VEIC) recommended that EPA revisit affordability concerns. The Alliance and Global noted that average vehicle transactions prices have increased. The Alliance stated that consumers do not change the fraction of their budgets for transportation; if vehicles become more expensive, they will have to buy less expensive vehicles with fewer features. Global Automakers expected price increases to lead some low-income households to switch from buying new to used vehicles, and some to be forced out of the market entirely. The Alliance reiterated that the standards have a disproportionate negative impact on low-income households. Mitsubishi expressed concern that it would have to add electrification to already efficient low-priced vehicles and the increased price could drive buyers to less efficient used vehicles. NADA and Graham expressed concerns that potential buyers will not be able to get loans large enough to cover the increased vehicle prices. Mercedes-Benz pointed out that up to half its sales in some markets are leased; the payback period for technologies to meet the standards may exceed the typical three-year leasing period, and low residual values for advanced technologies could further increase lease payments.

Vehicle Sales and Fleet Turnover

Commenters shared perspectives on the current and projected state of the vehicle market and demand. Global Automakers commented that overall vehicle sales have leveled off, and it believes that sales may decline in coming years.

Various comments raised questions about how to predict the impacts of the standards on vehicle sales. The Alliance and NADA argued that EPA has not yet conducted an "appropriate analysis" (NADA) of the sales impacts of the standards, and NADA asks the agencies to "fully

understand" consumer vehicle purchase decisions. The Alliance referenced work by Ford suggesting that the standards would reduce sales volumes by 4% using cost estimates from the Draft TAR. It also cited a study by TC/NERA,[12] which found that 1.3 million fewer vehicles will be sold in MY 2022-2025 due to higher vehicle prices. CEI considered EPA to have downplayed the effects of the standards on sales and employment.

Auto industry and dealer comments discussed implications for vehicle fleet turnover. The Alliance noted that low fleet turnover would reduce the effectiveness of the GHG program. NADA suggested that the GHG program should seek to maximize fleet turnover.

Employment and Macroeconomic Impacts

Commenters expressed differing points of view on the potential effects of the standards on employment and the macroeconomy.

Some commenters pointed to negative effects on the economy and employment due to higher costs from the standards. The Alliance commented that each job in the auto sector creates 6.5 additional jobs, and stated that auto sector employment is generally related to vehicle sales, which it expected to decline. The Alliance, Global Automakers, and Fiat Chrysler expressed concern that cost increases associated with the MY 2022-2025 standards could reduce sales and employment, and put downward pressure on the macroeconomy. Clean Fuels Development Coalition believes that deregulating could stimulate the economy and create jobs. The Alliance and Global Automakers argued that reduced revenues from a sales drop due to the standards would reduce spending on research and development.

Some commenters stated there would be positive effects on employment from the standards through their effects on investments. The UAW commented that radically weakening standards will adversely impact investments in key technologies and put domestic manufacturers behind in the global marketplace. The UAW stated standards could be a win-win for environment, workers, manufacturing, and economy, if set through consensus-building as in the past. BlueGreen Alliance (BGA) has identified 288,000 American workers who make fuel-saving technologies being used to meet the standards.[13] Tesla identified jobs it has created in battery cell production in the U.S., while the Alliance considers it likely that most battery pack jobs will be outside the U.S. Honeywell identified jobs associated with its new automotive refrigerant being used by auto manufacturers to generate air conditioning credits toward meeting the standards. AVE pointed to increasing jobs and rapid technological innovation in the auto sector in recent years. NYU IPI stated that the standards are likely to have a relatively small effect on employment in the auto sector, due to the flexibility and low costs of the standards, and any effects on employment may be offset by employment effects elsewhere in the economy.

---

[12] Trinity Consultants & NERA Economic Consulting, Critical Assessment of Certain Technical And Economic Assumptions Made in EPA'S Final Determination On the Appropriateness of the Model Year 2022-2025 Light-duty Vehicle Greenhouse Gas Emission Standards Under the Midterm Evaluation 2 (Oct. 2017).

[13] Natural Resources Defense Council and Blue Green Alliance, Supplying Ingenuity II: U.S. Suppliers of Key Clean, Fuel-Efficient Vehicle Technologies (June 2017). https://www.bluegreenalliance.org/resources/supplying-ingenuity-ii-u-s-suppliers-of-key-clean-fuel-efficient-vehicle-technologies/

Some commenters referred to a study from the Center for Automotive Research (CAR)[14] that estimated significant sales and employment losses due to the standards. Global Automakers cited that study for evidence of adverse effects of the standards on jobs.

A number of commenters cited Carley et al.[15], which included a study of the macroeconomic impacts of the standards, conducted by researchers at Indiana University. The study found that the long-term effects of the standards are positive for employment, Gross Domestic Product, and disposable income, though the short-run effects are negative; the accumulated positive benefits will not overtake the negative effects until at least 2025.

Program Flexibilities

EPA received numerous comments regarding various aspects of the light-duty GHG program flexibilities including off-cycle credits, advanced technology incentives, and averaging, banking, and trading provisions.

Many comments addressed the off-cycle credits program. Several automakers commented that the off-cycle program should be streamlined in ways that would give manufacturers more certainty and make it easier for manufacturers to earn credits. For example, Toyota commented that EPA should open the program to additional technologies without a cap on menu credits specified in EPA's regulations. Mercedes requested that the agencies increase the availability of credits to support the deployment of advanced technologies. The Alliance commented that process and other issues with the off-cycle credit technology program "have reduced its feasibility for inclusion as an available technology" and that the credits should not be included in EPA's technology projections. The Alliance commented further that manufacturers are encountering difficulty in obtaining approval of off-cycle technology credits under all available options and that unanticipated requirements or restrictions—such as performance testing, caveats, or narrow interpretations of technology definitions—have resulted in uncertainty regarding the off-cycle credit generation program. Global Automakers commented that EPA should provide for a default acceptance of petitions for off-cycle credits and that streamlining the process will further promote a more efficient and better harmonized National Program.

Suppliers also provided comments recommending changes to the off-cycle credits program. MEMA commented that the program "offers OEMs important flexibilities in meeting the standards and will be critical to compliance in MYs 2022–2025." MEMA recommended expanding the current pre-defined off-cycle credit menu, eliminating the credit cap on the pre-defined list of off-cycle technologies, and allowing suppliers an independent process for allowing their technologies to be eligible for credits. MECA also recommended providing a parallel supplier pathway commenting "[w]e continue to believe that a parallel supplier pathway to contingent pre-certification would greatly expand the available technologies and resources for full demonstration across a fleet of integrated vehicles by the OEM to ultimately confirm the real world CO2 reductions of a given technology."

---

[14] McAlinden et al., Center for Automotive Research (2016). The Potential Effects of the 2017-2025 EPA/NHTSA GHG/Fuel Economy Mandates on the U.S. Economy. http://www.cargroup.org/publication/the-potential-effects-of-the-2017-2025-epanhtsa-ghgfuel-economy-mandates-on-the-u-s-economy/

[15] Sanjay Carley, Denvil Duncan, John D. Graham, Saba Siddiki, and Nikolaos Zirogiannis. "A Macroeconomic Study of Federal and State Automotive Regulations," Indiana University School of Public and Environmental Affairs, March 2017.

UCS referred to EPA's off-cycle flexibility provisions and commented that "[t]his reasoning remains consistent with the intent of the off-cycle program, the principles of which have been previously laid out in comments directly responding to automaker requests to alter the off-cycle program....Those principles, summarized, are: 1) demonstration of off-cycle benefits must be rigorous and fully documented; 2) off-cycle credits should be limited to new and innovative technologies; and 3) to be eligible for credit, a technology must reduce emissions from the vehicle receiving the credit. The program was established on these three principles, and they continue to remain prudent in order to ensure that real-world reductions in fuel use and emissions are achieved."

ACEEE commented that "any relaxation of the off-cycle credit program's requirements could undermine the credibility and effectiveness of the standards overall. They also say that "[b]y ensuring that the credits are based on demonstrated real-world benefits, which we believe the current off-cycle regulatory framework does, EPA ensures that emissions reductions associated with the standards are maintained. The existing credits process in place today ensures that credits are legitimate and maintains the integrity of the program."

Several commenters supported extending incentives for advanced technologies. The Alliance recommended that EPA extend the advanced technology multiplier incentives beyond MY2021 and that manufacturers should not be held responsible for upstream power plant emissions (i.e., manufacturers should be allowed to use the 0 g/mile emissions factor for electric powered vehicles rather than having to account for upstream electricity generation emissions). Toyota similarly commented that EPA should extend the current advanced technology sales multiplier and 0 g/mi allowance through MY2025. Mercedes Benz requested that EPA extend the multipliers through at least MY2025 to support further commercialization of electric and hybrid vehicles. Jaguar Land Rover supported the reconsideration of the final determination as a way "to enable a future final determination that provides incentives for very clean technologies."

NGV America urged the agency provide a level playing field for natural gas vehicles. As stated in their comments, "Regulatory incentives currently in place for vehicle manufacturers provide no benefit for renewable natural gas and include requirements that prevent automakers from realizing benefit from selling natural gas vehicles," including the driving range requirement on alternative fuel that is not required for natural gas vehicles but no electric vehicles.

Several NGO and other commenters also supported flexibilities for advanced technology vehicles. Securing America's Future Energy (SAFE) commented in support of extending the advanced technology credits out to MY 2025 to help facilitate and accelerate the transition to energy sources other than oil. Edison Electric Institute commented in support of extending the advanced technology credits. NCAT commented that to the extent that EPA seeks to make adjustments to increase flexibility, it urges the agency to recognize and support the role of EVs and other advanced technology vehicles.

Whitefoot et al. from Carnegie Mellon University commented against extending the advanced technology incentives, stating that the advanced technology incentives should be phased out, and marginal electric power grid emissions from vehicle charging should be included in electric vehicle emissions estimates for compliance calculations. These commenters recommended using regional marginal emission factor estimates to compute electric vehicle charging emissions and regularly updating marginal emission factor estimates as the power grid changes.

The Alliance and Toyota commented that the current full size pick-up truck incentives should be available to all light-duty trucks. They further commented that the program's sales volume thresholds should be removed because they discourage the application of technology, since manufacturers cannot be confident of achieving the sales thresholds.

The ELPC commented that the current program flexibilities are "enormously significant in making the standards even more feasible than the technology and cost assessments, by themselves, may suggest." They also noted that the industry is taking advantage of its many banked credits as a flexible compliance strategy.

Regarding credit banking and trading provisions, the Alliance commented that credits should not expire. The Alliance also commented that manufacturers should be able to be trade credits across light-duty, medium-duty and heavy-duty vehicles.

Final Determination

EPA appreciates the comments and information provided by commenters and recognizes that there is a diversity of views among stakeholders regarding the MY 2022-2025 light-duty vehicle GHG standards. Even with the range in perspectives, it is clear that many of the assumptions the Agency relied upon in its previous Final Determination, including gas prices, technology effectiveness and cost, and the consumer acceptance of advanced technology vehicles, have significantly changed. Further concerning is the apparent misalignment between increasing costs and either consumer willingness to pay or a miscalculation of affordability limitations. The reach and success of the program is significantly limited when consumers are priced out the buying new cars. New information and data provide by the automobile manufacturers and the auto dealers are of particular interest to the program because they have the most experience with the potential difficulties in implementing the standards and stand to bear the brunt of resulting consequences.

Based on our review of the comments and information submitted, EPA believes that the current GHG program for MY 2022-2025 vehicles presents difficult challenges for auto manufacturers and adverse impacts on consumers. On the whole, EPA believes the model year 2022-2025 standards are not appropriate and, therefore, should be revised to be less stringent as appropriate. The auto industry commenters stated that adjustments to the program were needed. EPA will further explore the appropriate degree and form of changes to the program through a notice and comment rulemaking process. In this notice, EPA is withdrawing the previous Final Determination issued by EPA in January 2017 and EPA is making a new Final Determination that the standards are not appropriate and should be modified, and EPA in a forthcoming *Federal Register* notice will initiate a notice and comment rulemaking under section 202(a) of the Clean Air Act to further consider appropriate standards for model year 2022-2025 light-duty vehicles. This notice concludes EPA's Mid-term Evaluation under 40 CFR 86.1818-12(h).

Dated: _____

_____

E. Scott Pruitt,

Administrator.